

Amendment and Response

Applicant: Ian P. Schaeffer et al.

Serial No.: 10/654,177

Filed: September 3, 2003

Docket No.: 10002500-2

Title: A METHOD OF FABRICATING A SUBSTANTIALLY ZERO SIGNAL DEGRADATION
ELECTRICAL CONNECTION ON A PRINTED CIRCUIT BOARD

IN THE CLAIMS

Please add claims 30 and 31.

Please amend claims 14-21, and 26-29 as follows:

1.-13.(Cancelled)

14.(Currently Amended) A method of fabricating a substantially zero signal degradation electrical connection on a printed circuit board, ~~the method comprising the steps of:~~

providing a printed circuit board defined by a dielectric structure core having a first surface, the first surface including a first conducting pad having an edge and a second conducting pad having an edge separated from and adjacent to the edge of the first conducting pad, the edges of the first and second conducting pads defining therebetween a surface area of the first surface;

applying a solder paste on the first and second conducting pads and on the first surface of the dielectric structure core, the solder paste ~~at least partially~~ covering less than an entirety of the surface area of the first surface between the edges of the first and second conducting pads to form a substantially zero signal degradation electrical connection between the first and second conducting pads.

15.(Currently Amended) The method of claim 14, and further including ~~the step of:~~ performing reflow soldering of the solder paste applied to the first and second conducting pads and the surface area of the first surface of the dielectric structure core.

16.(Currently Amended) The method of claim 14 wherein ~~the step of applying the solder paste includes the steps of:~~

placing a stencil on the first surface of the dielectric structure core, the stencil defining a first opening sized to substantially correspond to the first conducting pad, a second opening sized to substantially correspond to the

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second conducting pad and a third opening that links the first opening to the second opening and is sized to correspond to a partial portion of the surface area of the first surface between the edges of the first and second conducting pads; and

applying the solder paste onto the stencil so that the solder paste flows through the first, second and third openings and onto the first and second conducting pads and the first surface of the dielectric structure core.

17.(Currently Amended) The method of claim 16, and further including ~~the steps of:~~
removing the stencil from the first surface of the dielectric structure core; and
performing reflow soldering of the solder paste applied to the first and second
conducting pads and the surface area of the first surface of the dielectric
structure core.

18.(Currently Amended) The method of claim 14 wherein ~~the step of applying the solder~~
paste includes:

applying the solder paste on the first surface of the dielectric structure core such that
the solder paste covers ~~substantially all~~ less than 360 square mils. of the
surface area of the first surface between the edges of the first and second
conducting pads to form a substantially zero signal degradation electrical
connection between the first and second conducting pads.

19.(Currently Amended) The method of claim 18 wherein ~~the step of applying the solder~~
paste includes ~~the steps of:~~

placing a stencil on the first surface of the dielectric structure core, the stencil
defining an opening sized to substantially correspond to the first conducting
pad, the second conducting pad and ~~substantially the entire~~ a portion of the
surface area of the first surface between the edges of the first and second
conducting pads; and

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applying the solder paste onto the stencil so that the solder paste flows through the opening and onto the first and second conducting pads and the first surface of the dielectric structure core.

20.(Currently Amended) The method of claim 19, and further including ~~the steps of:~~
removing the stencil from the first surface of the dielectric structure core; and
performing reflow soldering of the solder paste applied to the first and second
conducting pads and the surface area of the first surface of the dielectric
structure core.

21.(Currently Amended) The method of claim 19 wherein the stencil includes a plurality
of openings in addition to the opening, and wherein prior to ~~the step of~~ placing the stencil on
the first surface of the dielectric core the method includes ~~the step of:~~
masking off at least one opening of the plurality of openings such that the solder paste
is prevented from flowing through the at least one opening.

22.(Original) The method of claim 14 wherein the edge of the second conducting pad is
separated from the edge of the first conducting pad by a pad edge-to-pad edge separation
distance of less than 12 mils.

23.(Original) The method of claim 22 wherein the pad edge-to-pad edge separation distance
is 8 mils.

24. – 25.(Cancelled)

26.(Currently Amended) The method of claim 14, wherein ~~the step of~~ applying the
solder paste includes ~~the steps of:~~

placing a stencil on the first surface of the dielectric structure core, the stencil
defining a first opening sized to correspond to a portion of the first conducting
pad, a second opening sized to correspond to a portion of the second

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conducting pad, and a third opening that links the first opening to the second opening and is sized to correspond to a partial portion of the surface area of the first surface of the dielectric structure core between the edges of the first and second conducting pads; and

applying the solder paste onto the stencil so that the solder paste flows through the first, second, and third openings and onto the portions of the first and second conducting pads and onto the partial a portion of the surface area of the first surface of the dielectric structure core.

27.(Currently Amended) The method of claim 26, and further including ~~the steps of:~~
removing the stencil from the first surface of the dielectric structure core; and
performing reflow soldering of the solder paste applied to the first and second
conducting pads and the surface area of the first surface of the dielectric
structure core.

28.(Currently Amended) The method of claim 14 wherein ~~the step of applying the~~
~~soldering paste includes the steps of:~~

placing a stencil on the first surface of the dielectric structure core, the stencil
defining an opening sized to correspond to a portion of the first conducting
pad, a portion of the second conducting pad and a portion of the surface area
of the first surface of the dielectric structure core between the edges of the first
and second conducting pads; and

applying the solder paste onto the stencil so that the solder paste flows through the
opening and onto portions of the first and second conducting pads and onto the
portion of the surface area of the first surface of the dielectric structure core.

29.(Currently Amended) The method of claim 28, and further including ~~the steps of:~~
removing the stencil from the first surface of the dielectric structure core; and

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performing reflow soldering of the solder paste applied to the first and second
conducting pads and the surface area of the first surface of the dielectric
structure core.

30.(New) The method of claim 14, wherein the first surface includes a first substantially
square conducting pad having an edge and a second conducting pad having an edge separated
from and adjacent to the edge of the first conducting pad.

31.(New) The method of claim 14, wherein the first surface includes a first substantially
square conducting pad having an edge and a second substantially square conducting pad
having an edge separated from and adjacent to the edge of the first conducting pad.